

AMENDMENTS TO THE CLAIMS:

Please cancel now pending claims 1-29 without prejudice or disclaimer, and add new claims 30-54 as follows:

LISTING OF CLAIMS:

30. (New) A support arrangement characterised in that it includes
a vessel in the form of a core barrel of a high temperature gas cooled reactor
which is housed within a reactor pressure vessel, the core barrel being generally
cylindrical in shape and having an axis which extends generally vertically;

a single vertical support for supporting the weight of the core barrel, the vertical
support including upper and lower support members which are connected respectively
to the core barrel and the reactor pressure vessel between which the vertical loads are
transmitted, the upper and lower support members which are relatively displaceable
defining oppositely disposed contact surfaces which are centrally positioned about the
axis; and

lateral support means for providing support to the core barrel, the lateral support
means including a plurality of circumferentially spaced upper lateral supports each of
which includes a set of inner and outer lateral support members connected to the core
barrel and the reactor pressure vessel, respectively, and a roller element sandwiched
between the inner and outer lateral support members.

31. (New) A support arrangement as claimed in claim 30, in which at least one of the contact surfaces is curved.

32. (New) A support arrangement as claimed in claim 31, in which both of the contact surfaces are curved.

33. (New) A support arrangement as claimed in claim 32, in which the upper support member defines a concave contact surface, the lower support member defining an oppositely disposed convex contact surface .

34. (New) A support arrangement as claimed in claim 33, in which the radius of the convex contact surface is smaller than that of the concave contact surface .

35. (New) A support arrangement as claimed in claim 30, in which the vertical support includes an intermediate member interposed between the upper and lower support members.

36. (New) A support member as claimed in claim 35, in which the intermediate member defines upper and lower contact surfaces which cooperate, respectively, with complementary contact surfaces of the upper and lower support members.

37. (New) A support arrangement as claimed in claim 36, in which the contact surfaces of the intermediate member are convex with the complementary contact surfaces of the upper and lower support members being concave.

38. (New) A support arrangement as claimed in claim 37, in which each convex contact surface has a radius which is smaller than that of the complementary concave contact surface.

39. (New) A support arrangement as claimed in claim 30, in which the upper lateral supports are positioned to support the core barrel laterally at or towards the upper end thereof.

40. (New) A support arrangement as claimed in claim 30, in which the roller includes at least one gear wheel having teeth, and at least one of the inner and outer upper lateral support members is provided with teeth which are complementary to those on the gear wheel to ensure that relative displacement between the roller and complementary bearing surfaces of the inner and outer upper lateral support members is by rolling.

41. (New) A support arrangement as claimed in claim 40, in which the bearing surfaces of the inner and outer upper lateral support members are inclined.

42. (New) A support arrangement as claimed in claim 30, in which at least one of the inner and outer upper lateral support members of each set is mounted on a resiliently deformable support.

43. (New) A support arrangement as claimed in claim 42, in which each outer upper lateral support member is mounted on a resiliently deformable support which, in turn, is mounted on an upper support ring secured to the reactor pressure vessel.

44. (New) A support arrangement as claimed in claim 43, in which the resiliently deformable support includes a pair of support posts connected to the upper support ring at spaced apart positions and an elastically deformable guide beam which extends between the support posts and on which the outer upper lateral support member is mounted.

45. (New) A support arrangement as claimed in claim 44, in which the position of the guide beam is adjustable thereby permitting the relative positions of the inner and outer upper lateral support members to be adjusted.

46. (New) A support arrangement as claimed in claim 30, in which the lateral support means includes a plurality of circumferentially spaced lower lateral supports positioned to provide lateral support to the core barrel adjacent to a lower end thereof.

47. (New) A support arrangement as claimed in claim 46, in which each lower lateral support includes an elastically deformable locating element extending radially between inner and outer receiving formations to transmit lateral loads between the core barrel and the reactor pressure vessel .

48. (New) A support arrangement as claimed in claim 47, in which the inner receiving formations are provided on the upper support member and the outer receiving formations are protrusions which protrude radially inwardly from a lower support ring secured to the reactor pressure vessel .

49. (New) A support arrangement as claimed in claim 30, which includes auxiliary support means for providing support to the core barrel within the reactor pressure vessel when subjected to loads in excess of normal operational loads such as would be experienced during a seismic event.

50. (New) A support arrangement as claimed in claim 49, in which the upper support member includes a central member which extends downwardly from the bottom of the core barrel and a plurality of angularly spaced support beams connected to the bottom of the core barrel and to the central member and extending radially outwardly from the central member, the auxiliary support means including a lower auxiliary support including a plurality of circumferentially spaced radially inwardly facing slots in which radially outer ends of the support beams are receivable with clearance.

51. (New) A support arrangement as claimed in claim 50, in which the slots are defined on a radially inner surface of a lower support ring secured to the reactor pressure vessel.

52. (New) A support arrangement as claimed in claim 49, in which the upper support member includes a central member which extends downwardly from a bottom of the core barrel and a plurality of angularly spaced support beams connected to the bottom of the core barrel and to the central member and extending radially outwardly from the central member to an annular skirt which depends from the core barrel, the auxiliary support means including a lower auxiliary support which includes a plurality of circumferentially spaced protrusions which protrude radially inwardly from a lower support ring secured to the reactor pressure vessel and which are received with clearance in complementary slots in the skirt.

53. (New) A support arrangement as claimed in claim 49, in which the auxiliary support means includes an upper auxiliary support comprising a plurality of circumferentially spaced ribs connected to and protruding outwardly from the core barrel and complementary slots provided in and opening out of a radially inner surface of the upper support ring within which slots end portions of the ribs are receivable with clearance.

54. (New) A method of supporting a vessel in the form of a core barrel of a high temperature gas cooled nuclear reactor which is housed within a reactor pressure

vessel, the core barrel being generally cylindrical in shape and having an axis which extends generally vertically, the method being characterised in that it includes

- transmitting the weight of the core barrel and its contents to the reactor pressure vessel through a single vertical support; and
- transmitting lateral loads between the core barrel and the reactor pressure vessel through a lateral support which is positioned at or adjacent an upper end of the core barrel and which includes a plurality of circumferentially spaced upper lateral supports each of which includes a set of inner and outer lateral support members connected to the core barrel and the reactor pressure vessel, respectively, and a roller element sandwiched between the inner and outer upper lateral support members.